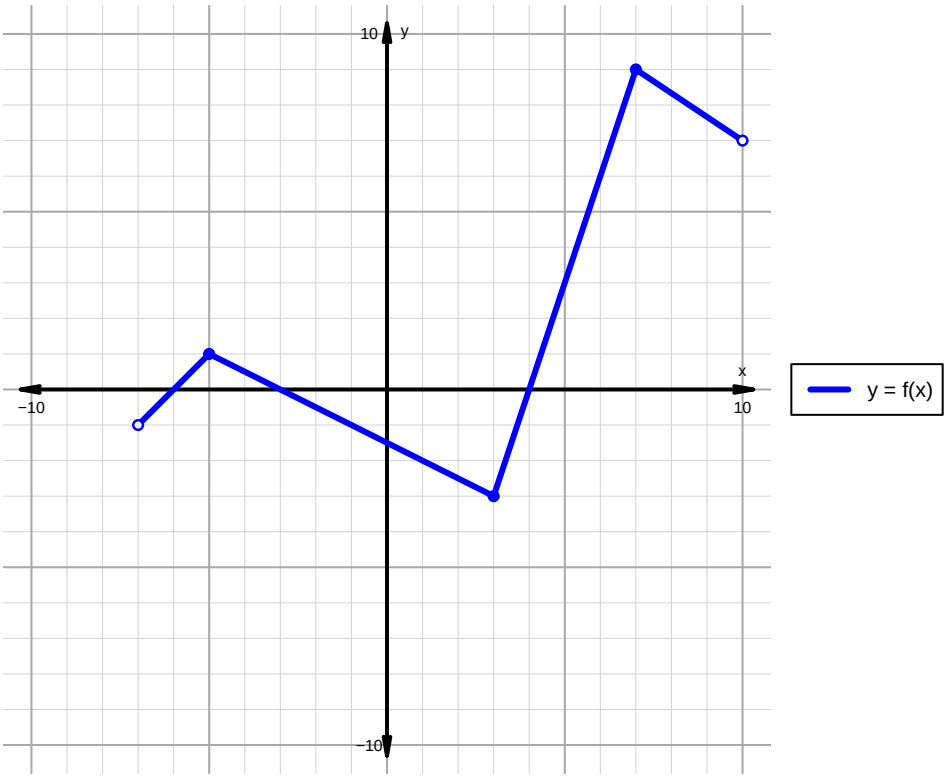
Name: Date:

Intervals, Transformations, and Slope Solution (version 113)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-6,-3)\cup(4,10)$
Negative	$(-7,-6)\cup(-3,4)$
Increasing	$(-7,-5)\cup(3,7)$
Decreasing	$(-5,3)\cup(7,10)$
Domain	$(-7,10)$
Range	$(-3,9)$

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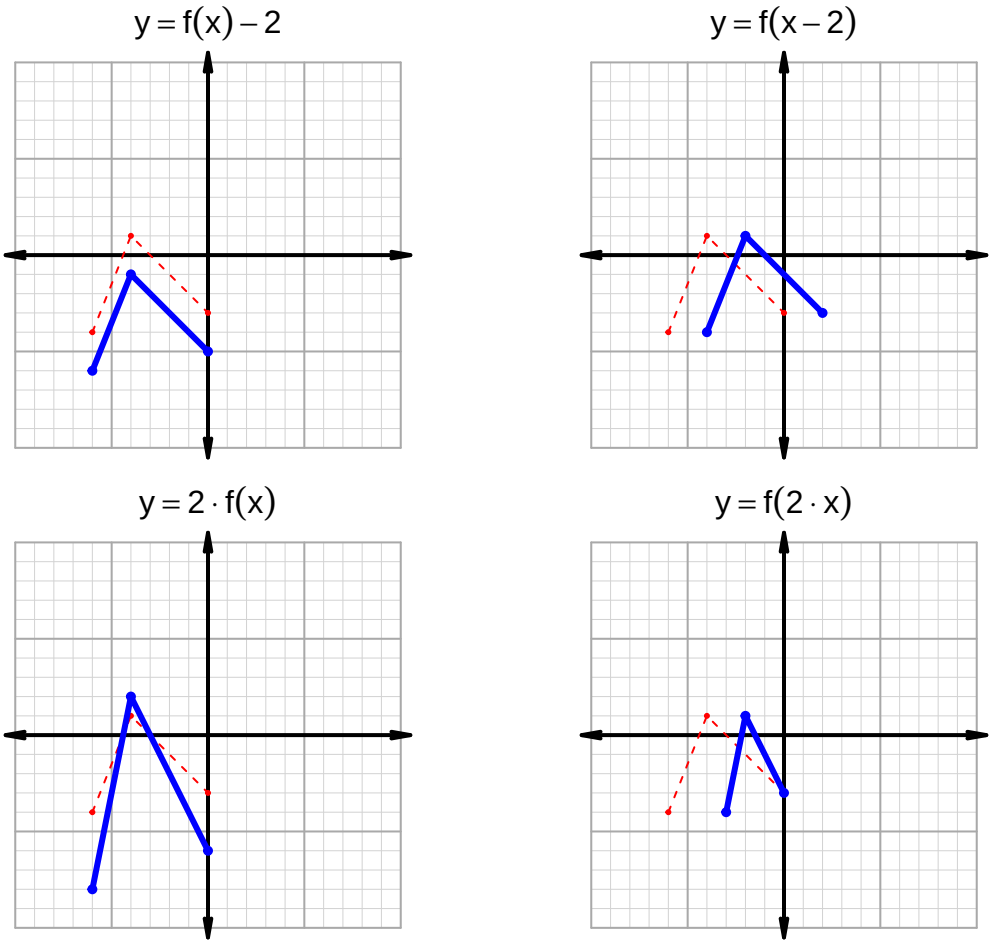
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 15$ and $x_2 = 78$. Express your answer as a reduced fraction.

x	$g(x)$
15	82
28	15
78	28
82	78

$\frac{f(78)-f(15)}{78-15} = \frac{28-82}{78-15} = \frac{-54}{63}$

The greatest common factor of -54 and 63 is 9. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-6}{7}$$